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EXAMINER

DATSKOVSKIY, SERGEY

ART UNIT	PAPER NUMBER
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2121

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Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/670,582	<b>Applicant(s)</b> BROMLEY ET AL.	
	<b>Examiner</b> Sergey Datskovskiy	<b>Art Unit</b> 2121	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 January 2004.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Claims 1-40 have been submitted for examination.
2. Claims 1-40 have been rejected.

### ***Claim Objections***

3. Claims 1 and 7 are objected to because of the following informalities:
  - a. Line 5 of claim 1 contains a redundant phrase "the delivers".
  - b. Line 2 of claim 7 contains a misspelled phrase "is least one of".

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1, 3-6, 8-19, 21-23, 29-32 and 37-40 are rejected under 35 U.S.C. 101 because the claimed invention is directed to a non-statutory subject matter.

Claims 1 and 18 are directed towards a system that renders data. The language of claims suggests that components of claimed systems describe software modules, and not physical devices.

Computer programs claimed as computer listings per se, i.e., the descriptions or expressions of the programs, are not physical "things". They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationship

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between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

Therefore, claims 1 and 18 are directed to a non-statutory subject matter. Dependent claims 3-6, 8-17, 19 and 21-23 are rejected for not being able to fix the problem found in the corresponding independent claims 1 and 18.

Even though claims 37-40 contain a method in preamble, their bodies don't contain steps of a method. Thus, these claims are interpreted in a similar way to the system claims 1 and 18. The limitations of claims 37-40 correspond to software modules. Therefore, these claims are rejected on the same basis as claims 1 and 18 above.

Claims 29-32 are rejected based on the same reasoning as claims 1 and 18 above, i.e. for claiming a computer program per se. However, these claims are also rejected as being directed to an abstract idea. The algorithm described in these claims is abstract, since it is limited to a manipulation of data. Abstract ideas (see Warmerdam, 33 F.3d at 1360, 31 USPQ2d at 1759) or mere manipulation of abstract ideas (see Schrader, 22 F.3d at 292-93, 30 USPQ2d at 1457-58) are not patentable. However, for claims including such excluded subject matter to be eligible, the claims

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must be for a practical application of the abstract idea. Such practical application can be identified in the following ways:

- a. The claimed invention "transforms" an article of physical object to a different state or thing.
- b. The claimed invention otherwise produces a useful, concrete and tangible result.

Claimed limitations do not produce any physical transformations. The next step would be to determine whether the claimed invention produces a useful, concrete and tangible result. Independent claim 29 results in formatting the data. Merely formatting the data does not appear to be a tangible result, instead just being data manipulation. Therefore, claim 29 is directed to an abstract idea that does not have any practical application. Claims 30-32 are rejected as being dependent from claim 29 and not fixing the problem found in that claim.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 37-40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. These claims recite a method in preamble; however, bodies of the claims contain no method steps.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-28, 33-35, 37-38 and 40 are rejected under 35 U.S.C. 102(e) as being anticipated by Wolff et al. (US App. No. 2003/0120714).

**Claim 1**

Wolff teaches a system that renders data in an industrial automation environment (page 1, paragraphs [0001] and [0002]; disclosed as an interface for a machine vision system), comprising:

a device analyzer that determines properties associated with a plurality of devices (page 2, paragraph [0017]) intended for delivery of data (page 5, paragraph [0050], properties of PDA are determined when a communication with MVS is established; see also paragraph [0047] for additional disclosure of properties established through a handshaking process); and

an HMI generator that generates code and/or data for the HMI in accordance with the determined properties of the devices (page 5, paragraph [0044]), and delivers the delivers the code and/or data to the respective devices (paragraph [0050], "...*machine vision program is stored in the sensor's program memory 284 (or another dedicated memory), and is transferred into the PDA when requested by the PDA via the PDA services layer*").

**Claim 2**

Wolff teaches the system of claim 1, the device analyzer comprising a memory and a processor (Figs 2 and 3; processing element 280 and memory 282; page 4, paragraphs [0038] and [0039]).

**Claim 3**

Wolff teaches the system of claim 2, the processor utilizes artificial intelligence techniques to properly render the data (page 6, paragraph [0052], "...*using an advanced statistical algorithm to convert MVS image data to the appropriate gray level and format based upon weight factors that may favor certain characteristics of the reduced-power display of a PDA*").

**Claim 4**

Wolff teaches the system of claim 1, the HMI generator automatically modifies code and/or data associated with an existing HMI for display on a new device for which

the HMI was not originally configured, wherein the HMI is modified according to the determined properties of the new device (page 5, paragraphs [0043]-[0044], modifying a generic application interface into a PDA-specific interface).

**Claim 5**

Wolff teaches the device analyzer of claim 1, wherein artificial intelligence techniques are employed in connection with manipulating a mapping (page 6, paragraph [0052], “...*using an advanced statistical algorithm to convert MVS image data to the appropriate gray level and format based upon weight factors that may favor certain characteristics of the reduced-power display of a PDA*”. Disclosed as mapping colors in an image data for converting it to the appropriate gray level.).

**Claim 6**

Wolff teaches the system of claim 1, employed in a processing environment comprising at least one of: a personal computer; a desktop computer; a laptop computer; a personal digital assistant; a hand-held computer; a cell phone; and a tablet computer (page 2, paragraph [0017]).

**Claim 7**

Wolff teaches the system of claim 1, wherein one or more of the device(s) coupled to the HMI generator is least one of: a display; a data store; and a server (Fig. 2, display 250; page 3, paragraph [0033]).



#### **Claim 8**

Wolff teaches the system of claim 1, the HMI generator comprising:

a processing element that facilitates creation of one or more multi-dimensional software objects that render data in multiple dimensions and/or formats at substantially the same time (Fig. 16; page 8, paragraphs [0078]-[0079]; disclosed by making live images and displaying them in the Live Display in real time, allowing for a portion of an image to be magnified and displayed in a zoom window); and

a component that obtains a common data input for the one or more multi-dimensional software objects (Fig. 2, image element 202; page 3, paragraph [0030]).

#### **Claim 9**

Wolff teaches the system of claim 8, wherein specific data is assigned to a software object (page 7, paragraph [0066], disclosed as HTML objects).

#### **Claim 10**

Wolff teaches the system of claim 9, the data varies at least one of size; color; translational location; rotation of a software object; text; audio; video; visibility; enable/disable state; object state; object type; object text; trending zoom level; audio volume; specification of audio clips; specification of video clips; and starting and/or stopping animation (page 7, paragraph [0065], text, state and other data are included in the disclosed GUI elements, such as menus, buttons, etc.).

**Claim 11**

Wolff teaches the system of claim 8, wherein changes to the common data input affect the one or more multi-dimensional software objects (page 8, paragraph [0078]; images are shown in real time, therefore any change of the input will affect the images).

**Claim 12**

Wolff teaches the system of claim 1, the HMI generator further comprising:

a component that associates one or more software objects with one or more physical devices (Fig. 2, image sensor 220; page 3, paragraph [0031]); and

a component that generates software objects wherein the one or more software objects are associated with data corresponding to the one or more physical devices (page 5, paragraph [0043]),

the physical devices affecting changes to the software objects and the software objects affecting changes to the physical devices (page 9, paragraph [0085]; disclosed by establishing a two-way communication between the sensor's communication interface and controller's interface).

**Claim 13**

Wolff teaches the system of claim 12, the one or more software objects imported from an outside source (page 5, paragraph [0046], generic application that includes GUI objects is loaded over the communication link).

**Claim 14**

Wolff teaches the system of claim 12, further comprising an interface to facilitate selection of data to associate with physical devices (Fig. 9, page 7, paragraph [0069], setup page).

**Claim 15**

Wolff teaches the system of claim 12, further comprising an interface to facilitate selection of specific attributes of software objects corresponding to data associated with physical devices (page 7, paragraph [0065]).

**Claim 16**

Wolff teaches the system of claim 1, further comprising:

a component that renders data based on one or more of a user access data level, a data type and a data state wherein the component is employed in an HMI residing in a processing environment (page 7, paragraph [0066], disclosed as a web browser).

**Claim 17**

Wolff teaches the system of claim 16 further comprising a user-based association between displayed data and at least one of: a user access level; a data type; and a data

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state (Fig. 8, owner window 818, page 7, paragraph [0067] disclose associating data with a particular user).

#### **Claim 18**

Wolff teaches a system that renders data in an industrial automation environment (page 1, paragraphs [0001] and [0002]; disclosed as an interface for a machine vision system) comprising:

a component that determines if the format and/or sub-format of the data is known to the system (page 6, paragraph [0052], application software converts image data from an MVS format to a format acceptable in a PDA. This implies that the software determines if the format and/or sub-format of the data is known to the PDA); and

an artificial intelligence component that determines the format of unknown data received by the HMI (paragraph [0052], see previous explanation); and

a processing component that process and renders the data in the HMI in a suitable format (page 8, paragraph [0078]).

#### **Claim 19**

Wolff teaches the system of claim 18, the artificial intelligence locates and renders a partial data set (page 6, paragraph [0054]).

**Claim 20**

Wolff teaches the system of claim 18 further comprising a memory which stores previously unknown data types to compare with future data (page 6, paragraph [0051], “...*the memory organization is altered so that it comports with the format preferred by a PDA*”).

**Claim 21**

Wolff teaches the system of claim 18, the HMI renders the data into at least one of text; audio; video; static image(s); and interactive image(s) (page 8, paragraph [0078], displaying images in real time).

**Claim 22**

Wolff teaches the system of claim 18, providing an error message when data cannot be rendered (page 7, paragraph [0066]; disclosed rendering through a web browser. It is inherent for a web browser such as Microsoft's Internet Explorer to provide an error message when data cannot be rendered).

**Claim 23**

Wolff teaches the system of claim 18, wherein data is rendered in a format and/or sub-format suitable to the display capabilities of the device on which the data is to be presented (page 6, paragraph [0056]).

**Claim 24**

Wolff teaches a method to display data based at least in part on a zoom level selected by a user comprising:

displaying data in a plurality of disparate views (page 6, paragraph [0054]); and  
displaying respective views associated with a corresponding zoom level (page 8, paragraph [0079]).

**Claim 25**

Wolff teaches the method of claim 24, further comprising:

presenting data associated with a zoom level chosen by the user (page 8, paragraph [0079], selecting portion of an image for zooming using a stylus and displaying on the Live Image screen); and

suppressing data associated with a zoom level chosen by the user (paragraph [0079], disclosed by transmitting only zoomed-in data over to PDA).

**Claim 26**

Wolff teaches the method of claim 24, further comprising assigning the data and the zoom levels (page 8, paragraph [0079], selecting portion of an image for zooming using a stylus and displaying on the Live Image screen).

**Claim 27**

Wolff teaches the method of claim 24, further comprising allowing the zoom level and the data to be associated in a non-linear relationship (paragraph [0079], a selected area of any size can be magnified to fill the screen. That implies a non-linear relationship, since the screen size is not linearly related to the size of an area to be zoomed).

**Claim 28**

Wolff teaches the method of claim 24, further comprising an artificial intelligence component capable of inferring a default zoom level based on a user preference (paragraph [0079], user expresses the preferences by selecting an area with a stylus; selected area is zoomed to a default level by fitting selected image to fill the screen).

**Claim 33**

Wolff teaches a method that facilitates rendering of data in an industrial automation environment (page 1, paragraphs [0001] and [0002]; disclosed as an interface for a machine vision system), comprising:

determining formatting requirements (page 6, paragraph [0052], application software converts image data from an MVS format to a format acceptable in a PDA. This implies that the software determines if the format and/or sub-format of the data is known to the PDA) associated with a plurality of devices (page 2, paragraph [0017]) intended for delivery of data; and

formatting the data respectively in accordance with the determined formatting requirements of the devices (page 6, left column, lines 12-16); and

delivering the formatted data to the respective devices (page 6, left column, lines 16-21).

#### **Claim 34**

Wolff teaches the method of claim 33, further comprising reformatting data associated with an existing HMI for delivery to a newly detected device based on the determined formatting requirements of the newly detected device (page 5, paragraphs [0043]-[0044], modifying a generic application interface into a PDA-specific interface).

#### **Claim 35**

Wolff teaches a method that facilitates rendering of data in an industrial automation environment (page 1, paragraphs [0001] and [0002]; disclosed as an interface for a machine vision system) comprising:

receiving data from a physical device to an HMI (page 6, left column, lines 1-10);  
and

comparing the data format to data formats known to the HMI (page 6, paragraph [0052]; converting image formats inherently implies comparing the formats); and

determining the format of unknown data received by the HMI (page 6, paragraph [0052], application software converts image data from an MVS format to a format acceptable in a PDA. All new data received by a PDA is considered to be unknown by



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PDA, therefore, converting image formats implies determining the format of such data.); and

processing (paragraph [0052], disclosed by formatting); and

rendering the data in the HMI in a suitable format (page 8, paragraph [0078]).

### **Claim 37**

Wolff teaches a method that facilitates rendering of data in an industrial automation environment (page 1, paragraphs [0001] and [0002]; disclosed as an interface for a machine vision system), comprising:

means to determine properties associated with a plurality of devices intended for delivery of data (page 5, paragraph [0050], properties of PDA are determined when a communication with MVS is established; see also paragraph [0047] for additional disclosure of properties established through a handshaking process); and

means to format the data respectively in accordance with the determined properties of the devices (page 5, paragraph [0044]); and

means to deliver the formatted data to the respective devices (paragraph [0050], *"...machine vision program is stored in the sensor's program memory 284 (or another dedicated memory), and is transferred into the PDA when requested by the PDA via the PDA services layer"*).

**Claim 38**

Wolff teaches a method that facilitates rendering of data in an industrial automation environment (page 1, paragraphs [0001] and [0002]; disclosed as an interface for a machine vision system) comprising:

means to determine if a format of the data is known to the system (page 6, paragraph [0052], application software converts image data from an MVS format to a format acceptable in a PDA. This implies that the software determines if the format and/or sub-format of the data is known to the PDA); and

means to determine the format of unknown data received by the HMI (page 6, paragraph [0052]; all new data received by a PDA is considered to be unknown by PDA, therefore, converting image formats implies determining the format of such data.); and

means to process and render the data in the HMI in a suitable format (page 8, paragraph [0078]).

**Claim 40**

Wolff teaches a method to display data based at least in part on a zoom level selected by a user comprising:

means to display data in a plurality of disparate views (page 6, paragraph [0054]); and

means to display respective views associated with a corresponding zoom level (page 8, paragraph [0079]).

7. Claims 29-32, 36 and 39 are rejected under 35 U.S.C. 102(b) as being anticipated by Shteyn (US Patent No. 6,199,136).

**Claim 29**

Shteyn teaches a system that facilitates recognizing and/or creating a software object representing a physical device (col. 1, lines 57-58), comprising:

a software object generator that determines properties associated with a plurality of devices (col. 4, lines 5-25) intended for creation of the software objects (col. 6, lines 14-17); and

an HMI generator that formats the data respectively in accordance with the determined properties of the devices (col. 3, lines 32-36).

**Claim 30**

Shteyn teaches the system of claim 29 further comprising an artificial intelligence component utilized to recognize a new device added to the system (col. 4, lines 27-50; disclose recognition of new devices with any additional functionality that is not present in the embedded device control module).

**Claim 31**

Shteyn teaches the system of claim 29 further comprising recognizing substantially all the components coupled to the system (col. 4, lines 20-25).

**Claim 32**

Shteyn teaches the system of claim 29 further comprising a mapping element to provide connectivity to the physical devices (col. 3, lines 37-39).

**Claim 36**

Shteyn teaches a method that facilitates recognizing and/or creating at least one software object representing at least one physical device (col. 1, lines 57-58), comprising:

determining the I/O and communications protocol of the at least one physical device (col. 4, lines 5-25); and

formatting the data respectively in accordance with the determined properties of the devices (col. 3, line 65 through col. 4, line 5; disclosed by choosing a corresponding set of commands based on the capabilities of a registered device); and

creating a software object representing the device with I/O to interface with the physical device (col. 6, lines 14-17).

**Claim 39**

Shteyn teaches a method that facilitates recognizing and/or creating at least one software object representing at least one physical device (col. 1, lines 57-58), comprising:

means to generate at least one software object by determining properties associated with a plurality of at least one of the devices intended for creation of the at least one of the software objects (col. 4, lines 5-25); and

means to format the data respectively in accordance with the determined properties of the devices (col. 3, line 65 through col. 4, line 5; disclosed by choosing a corresponding set of commands based on the capabilities of a registered device); and

means to create at least one or more software objects representing the at least one device with I/O to interface with the at least one physical device (col. 6, lines 14-17).

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Papadopoulos et al. (US Patent No. 6,282,454) teaches a web interface to a programmable controller. Louis Wallace et al. (US App. No. 2002/0046221) teaches method, system, and apparatus for providing data regarding the operation and monitoring of a control system. Chang et al. (US App. No. 2002/0055984) teaches method for device-to-device pervasive digital output. Wong et al. (US App. No. 2003/0070061) teaches transformation of platform specific graphical user interface widgets migrated between heterogeneous device platforms. Elsbree et al. (US App. No. 2003/0107588) teaches graphical human-machine interface on a

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portable device. Poerner et al. (US App. No. 2004/0133853) teaches a system and method for navigating an HMI. Leonik (US App. No. 2004/0205185) teaches a method and apparatus for dynamically displaying real world data in a browser setting. Miksovsky (US Patent No. 7,013,297) teaches an expert system for generating user interfaces. Elsbree et al. (US Patent No. 7,017,116) teaches a graphical human-machine interface on a portable device.

### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sergey Datskovskiy whose telephone number is (571) 272-8188. The examiner can normally be reached on Monday-Friday from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight, can be reached on (571) 272-3687. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S.D.

Assistant examiner

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A handwritten signature in black ink, appearing to read "Anthony Knight", is positioned above the printed name.

Anthony Knight

Supervisory Patent Examiner

Technology Center 2100